UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/016,002	01/30/1998	DAVID S. LAMPERT	7117-89	6408

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EXAMINER
COLBERT, ELLA

ART UNIT	PAPER NUMBER
2172	

DATE MAILED: 03/29/2002

19

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>11 January 2002</u> .

2a)☒ This action is **FINAL.** 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>2-10,13-15,17,19,20 and 23-29</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>2-10,13-15,17,19,20 and 23-29</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892) 4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5)☐ Notice of Informal Patent Application (PTO-152)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . 6)☐ Other: .

DETAILED ACTION

Response to Amendment

1.   Claims 2-10, 13-15, 17, 19, 20, and 23-29 are presented for examination. Claims 23-25,

27, and 29 have been amended in this communication filed 01/11/02, entered as Amendment C,

paper no. 18.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 2-10, 13-15, 17, 19, 20, and 23-29 rejected under 35 U.S.C. 103(a) as being

unpatentable over (US 4,888,698) Driessen et al, hereafter Driessen.

With respect to claim 2, Driessen did not explicitly teach, the first index being a bitmap,

but it would have been obvious to one having ordinary skill in the art at the time the invention

was made to have the first index to be a bitmap and to modify in Driessen because such a

modification would allow Driessen to have a data structure in memory that represents

information in the form of a collection of individual bits. A bit map which is well known in the

art is used to represent a bit image such as a geographical map.

With respect to claim 3, the sub-areas being a sub-rectangle (col. 1, lines 44-53)

With respect to claim 4, the first index is stored internally of the parcel associated

therewith (col. 2, lines 60-68 and col. 8, lines 65-68).

With respect to claim 5, the parcels storing a second index identifying boundaries of each

of the plurality of sub-areas (col. 7, lines 65-68).

With respect to claim 6, Driessen did not explicitly teach, the second index is a kd-tree

index, but it would have been obvious to one having ordinary skill in the art at the time the

invention was made to have a kd-tree index for the second index because to use a kd-tree index is

one way of ordering parcels by using a depth-first within each parcel type and layer. This

provides an ordering similar to the Peano-key ordering taught in Driessen in col. 7, lines 62-68

and col. 8, lines 1-4.

With respect to claim 7, Driessen did not teach the second index is stored internally of the

parcel, but it would have been obvious to one of ordinary skill in the art at the time the invention

was made to have a second index for storing the parcel internally and to modify in Driessen

because such a modification would allow Driessen to have an index as a way of sorting and

accessing data or files by creating an alphabetical list of keywords and to speed up the retrieval of

data from storage.

With respect to claim 8, the data entities represent geographic features encompassing

each of the sub-areas that are approximately equal in number to the data entities representing

geographic features encompassed by each of the other sub-areas (col. 8, lines 17-38 and col. 9,

lines 17-42).

With respect to claim 9, the data entities represent segments of roads in the geographic region (col. 4, lines 35-42, col. 5, lines 29-33 and lines 51-55, and col. 6, lines 47-54).

With respect to claim 10, the step of dividing forms eight sub-areas (col. 9, lines 21-33).

With respect to claim 13, this dependent claim is rejected for the similar rationale given for claim 9.

With respect to claim 14, this dependent claim is rejected on grounds corresponding to the rejections given above for dependent claim 6. In dependent claim 14, Applicant claims a method which contains steps corresponding to the method of rejected dependent claim 6.

With respect to dependent claim 15, this claim is rejected on grounds corresponding to the rejections given above for dependent claim 2. In dependent claim 15, Applicant claims a method which contains steps corresponding to the method of rejected dependent claim 2.

With respect to claim 17, Driessen did not teach, a plurality of index tables of a second type associated with a respective one of the plurality of parcels wherein the index tables of the second type comprises: a reference to each of the plurality of separate sub-areas into which the area associated with the parcel is divided, but it would have been obvious to one of ordinary skill in the art at the time the invention was made to have index tables associated with a separate one of the parcels where each of the index tables of the second type comprises a reference to each of the plurality of separate sub-areas into which the area is associated with the parcel is divided because an index table is well known to one of ordinary skill in the art to have the index tables of a second type associated with separate plurality of parcels where each of the index tables of the

second type comprises a reference to each of the plurality of separate sub-areas into which the

area associated with the parcel is divided because index tables are a way of sorting and accessing

data or files by creating an alphabetical list of keywords of the sub-areas associated with the

divided parcel. An index speeds up the retrieval of data from storage.   `

With respect to claim 19, the sub-areas associated with each parcel are spatially organized

(col. 6, lines 40-67 and col. 7, lines 1-29).

With respect to claim 20, the groupings of the data entities associated with each

rectangular sub-area are approximately similar in number to each other (col. 8, lines 17-38).

With respect to claim 23, separating a plurality of data entities that represent the

geographic features in a plurality of parcels (col. 3, lines 57-68 and col. 4, lines 35-39), each

parcel of the plurality of parcels contains a separate subset of the plurality of data entities (col. 1,

lines 10-33), the subset of the plurality of data entities contained in each parcel represents the

geographic features located in a separate one of a plurality of areas into which the geographic

region is divided (col. 4, lines 25-34 and fig. 1), wherein an improvement comprises: dividing the

area associated into a plurality of sub-areas (col. 5, lines 15-33), storing a first index that

identifies for each of the data entities contained in the parcel each of the sub-areas intersected by

the geographic feature represented (col. 8, lines 13-44), and each sub-area in which a geographic

feature is located can be determined by using the first index (col. 4, lines 36-39 and col. 5, lines

15-26). Driessen did not explicitly teach a first index, but it would have been obvious to one of

ordinary skill in the art at the time the invention was made to have a first index because indexes

are used to speed up the retrieval of data or files and to access the files or data in a sorted order

by creating an alphabetized list of keywords.

With respect to claim 24, accepting specification of a search area in a geographic region

represented by the geographic database (col. 5, lines 44-56), identifying a parcel of data in the

geographic database, wherein the parcel contains data entities that represent geographic features

encompassed within a first rectangular area located within the geographic region wherein the first

rectangular area intersects the search area (col. 5, lines 43-67 and col. 6, lines 63-67). Driessen

did not explicitly teach wherein an improvement comprises: a using first index associated with

the parcel to identify which of a plurality of rectangular sub-areas into which the first rectangular

area is divided intersect the search area, using a second index associated with the parcel to

identify the data entities contained in the parcel that intersect each of the plurality of rectangular

sub-areas identified as intersecting the search area, whereby the data entities that represent the

geographic features located within the search area are determined, but it would have been

obvious to one of ordinary skill in the art at the time the invention was made to have a first and

second index associated with the parcel to identify which of the plurality of rectangular sub-areas

into the first rectangular area is divided to intersect the search area where the data entities

represent the geographic features within the search area because indexes are used to speed up the

retrieval of data or files and to access the files or data in a sorted order by creating an

alphabetized list of keywords relating to the sub-areas that are identified in a search with the

geographic features of the data entities.

With respect to claim 25, (a) identifying each parcel associated with a rectangular area

that intersects the search area (col. 1, lines 40-62 and col. 3, lines 59-66), (b) for each parcel

identified in step (a) using a first index associated with the parcel to identify each rectangular

sub-area formed of the rectangular area ... (col. 3, lines 66-68 and col. 4, lines 1-10), wherein an

improvement comprises: (c) for each parcel identified in step (a) using a second index associated

with the parcel to identify each of the data entities ... (col. 8, lines 18-39), whereby the data

entities identified in step (c) represent geographic features located in the search area (col. 3, lines

59-68). Driessen did not explicitly teach a first index associated with the parcel to identify each

rectangular sub-area ..., using a second index associated with the parcel to identify the data

entities ... , but it would have been obvious to one of ordinary skill in the art at the time the

invention was made to have a first index associated with the parcel to identify the rectangular

sub-area formed of the rectangular area ... and using a second index associated with the parcel to

identify the data entities ... because indexes are used to speed up the retrieval of data or files and

to access the files or data in a sorted order by creating an alphabetized list of keywords relating to

the sub-areas that are identified in a search with the geographic features of the data entities.

With respect to claim 26, each data record represents a physical geographic feature in a

geographic region (col. 5, lines 16-21), the data records are separated into a plurality of parcels

(col. 1, lines 40-62), each parcel contains a separate portion of the data records such that the

portion of the data records contained in each parcel represents those geographic features ... (col.

2, lines 23-50 and col. 8, lines 27-42), wherein the improvement comprises: a plurality of index

tables of a first type each associated with a separate one of the plurality of parcels ... comprises:

a separate reference to each data record in the parcel to which the index table is associated (col.

7, lines 21-29 and col. 8, lines 52-65), a reference to at least one of a plurality of groupings of the

plurality of data records in the parcel (col. 7, lines 40-66), wherein the plurality of groupings are

based upon a division of the area associated with the parcel of smaller sub-areas (col. 9, lines 19-

42). Driessen did not teach, a plurality of index tables of a first type associated with a respective

one of the plurality of parcels wherein the index tables of the first type comprises: a separate

reference to each data record in the parcel in which the index table is associated, but it would

would have been obvious to one of ordinary skill in the art at the time the invention was made to

have index tables associated with a separate reference to each data record in the parcel in which

the index table is associated because index tables are a way of sorting and accessing data or files

by creating an alphabetical list of keywords of the sub-areas associated with the divided parcel.

An index is known to speed up the retrieval of data from storage.

With respect to claim 27, (a) data entities each of which represents a geographic feature in

a geographic region (col. 5, lines 16-21), wherein the data entities are separated into a plurality of

parcels (col. 1, lines 40-62), wherein each parcel contains a subst of the data entities (col. 5, lines

22-31), wherein the subset of data entities in each parcel represents those geographic features ...

wherein an improvement comprises: (col. 5, lines 31-33), (b) a plurality of indexes, each of

which is associated with a separate one of the plurality of parcels and where the index relates

each of the data entities in the subset of data entities ... (col. 1, lines 40-45, col. 2, lines 44-68,

and col. 4, lines 1-10), and the geographic database is stored on a computer readable storage

medium (col. 5, lines 35-38). Driessen did not teach, the database is a geographic database but it

would have been obvious to one having ordinary skill in the art at the time the invention was

made to have a geographic database because the geographic data in a geographical navigation

system is usually stored on a geographical database. A database is a file composed of records

with fields together with a set of operations for searching, sorting, recombining, and other

functions.

With respect to dependent claim 28, this dependent claim is rejected for the similar

reason given for rejected method claim 13.

With respect to claim 29, a plurality of parcels, each of which contains a separate portion

of the data records, ... (col. 2, lines 23-50 and col. 8, lines 27-42), wherein an improvement

comprises: a plurality of first indexes each of which is associated with a plurality of parcels, ...

(col. 8, lines 13-44), and the computer readable data structure means identifies which of the data

records represent segments of roads located in any specified sub-area of any specified area (col.

4, lines 35-42, col. 5, lines 29-33 and lines 51-55, and col. 6, lines 47-54). Driessen did not

explicitly teach, a plurality of second indexes each of which is associated with a plurality of

parcels, ... , but it would have been obvious to one having ordinary skill in the art at the time the

invention was made to have a plurality of second indexes each of which is associated with a

plurality of parcels, ... because indexes are a used to sort and access data or files by creating an

alphabetical list of keywords of the sub-areas associated with the parcel. An index is known to speed up the retrieval of data from storage.

Response to Arguments

4. Applicant's arguments filed 01/11/02 have been fully considered but they are not persuasive.

1. Applicants' argue: the Driessen reference does not include any teaching or suggestion of organization or access of data entities within a parcel, or even the need for organization of access of data entities within a parcel, "areas" associated with "parcels" are further divided into a "plurality of sub-areas" and a "first index" that associates the "data entities" in the "parcel" with the "sub-areas" as recited in claim 23 has been considered but is not persuasive because Driessen is interpreted as teaching dividing each main cell (parcel) into a further number of data parcels (data entities) whereby each data parcel covers a respective part of the main cell (parcel) (data entities within a parcel) ... in col. 1, lines 17-21 and in col. 1, lines 61-67 and figs. 1 and 2 (organization and accessing the data entities within a parcel). Driessen is further interpreted as teaching "areas" associated with "parcels" are further divided in to a "plurality of sub-areas" (the database is a roadmap, ... the database is divided into main cells which cover surface areas ...and each main cell (parcels) is divided into base cells (sub-areas)covering surface areas in col. 4, lines 25-34. Driessen did not explicitly teach a "first index," but it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a "first index" and in view of Driessen's teachings of a second

identifier by forming a number of indices, each index indicating a respective data parcel of its

appertaining main cell in col. 3, lines 19-22 and to modify in Driessen because such a

modification would allow Driessen to have a way of sorting and accessing data files by creating

an alphabetical list of keywords of the sub-areas associated with the parcel. It is well known in

the art that an index speeds up the retrieval of data from storage.

    2.   Applicants' argue: Driessen includes no teaching or suggestion of organization or

access of data entities within a parcel, or even the need for organization or access of data entities

within a parcel has been considered but is not persuasive because this argument is discussed in

argument number one.

Conclusion

5.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

    Tanimoto (5,893,898) discloses a navigation system having intersection routing and a

database.

    Funita et al (US 5,513,110) discloses a navigation system with hierarchical levels of

roads.

    Naito et al (US 5,867,110) discloses navigation system, a database with geographic data,

and a second database for displaying a road map on the screen of a display unit.

    Komatsu et al (US 5,797,112) discloses a navigation apparatus, a database, indexes, and a

map stored in memory.

6.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Inquiries

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Ella Colbert whose telephone number is (703)308-7064.

The examiner can normally be reached **Monday through Thursday from 6:30 a.m. to**

5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mrs. Kim Vu, can be reached on (703)305-4393.

Any response to this action should be mailed to:

> Commissioner of Patents and Trademarks
> Washington, D.C. 20231

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Or faxed to:

(703)746-7239 for Official communications or

(703)746-7238 for After-Final communications

or (703)746-7240 Non-Official communications.

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, Virginia, Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose telephone number is (703)305-3900.

E. Colbert
March 18, 2002

KIM VU
SUPERVISORY PATENT EXAMINER
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